REMARKS

A. Objection to the Disclosure.

The disclosure has been objected to because of the omission of the conjunction "and" after inflammatory bowel disease. Applicant respectfully requests reconsideration of the objection, as ulcerative colitis is a subset of a larger group of chronic inflammatory disorders collectively referred to as inflammatory bowel disease. Adding "and" between "ulcerative colitis" and "inflammatory bowel disease" would make the two conditions appear to be separate disorders instead of conveying the fact that inflammatory bowel disease is a more general descriptive term for disorders among which ulcerative colitis is but a narrower group.

B. Rejection of Claims 12-15 under §112, second paragraph.

Claim 12 and dependent claims 13-15 have been rejected under 35 USC §112, second paragraph, as being indefinite in the recitation of "autoantigen response to hTM". According to the Office Action, it was "unclear whether hTM is the autoantigen or if an autoantibody response is made to hTM." Applicant has amended claim 12 to recite an "autoimmune response to hTM" in order to clarify that the disorders detectable by this method are those in which the patient's immune system mounts a response to the externalized hTM in affected tissues.

Claim 12 has further been rejected under 35 USC §112, second paragraph, as being indefinite and ambiguous because it is "unclear as to what compound is used to detect the complexes." Applicant respectfully points out that the term "detecting" is a term of art that is commonly used and well understood by the person of skill in the art of molecular biology. Patent claims utilizing the term "detecting" for the determination of the presence of proteins are routinely granted, as evidenced, for example, by claim 1 in United States Patent 6,416,961:

"1. A method for determination of the significance of a histologically detected premalignant lesion as a risk for intestinal type gastric cancer or carcinoma in situ, comprising ***detecting*** from a patient sample comprising gastric mucosa cells
a) cyclooxygenase-2 (Cox-2) mRNA expression, or
b) Cox-2 protein;
wherein overexpression of Cox-2 is indicative of an increased risk for intestinal type gastric cancer,"

or claim 1 in United States Patent 6,372,441:

"1. A method of diagnosing Hodgkin's lymphomas, comprising ***detecting*** the expression of the variable exon v10 in the CD44 gene in a patient or in a sample obtained from a patient, wherein the expression of the variable exon v10 in the CD44 gene indicates Hodgkin's lymphomas."

These claims show that limitations specifying the exact reagent used for detecting proteins are not required in order to comply with 35 U.S.C §112, second paragraph, under current patent examination procedure. Because the use of the term "detecting" in claim 12 is recognized as being reasonably clear to the person of ordinary skill in the art, applicant respectfully requests withdrawal of the indefiniteness rejection.

C. Rejection of Claims 12-15 under §112, first paragraph.

Claims 12-15 have been rejected for lack of enablement under 35 U.S.C. §112(1) because the specification purportedly did not reasonably provide enablement for a diagnostic method for detecting any disease other than ulcerative colitis and inflammatory bowel disease in the intracellular and extracellular spaces of any cell type other than colon epithelial cells, skin and biliary epithelium, ciliary epithelium in the eye, and chondrocytes (Office Action p. 3). According to the Office Action, "applicant has not taught how to detect any disease comprising detecting CEP-hTM complexes in extracellular and intracellular spaces of any cell or tissue." The Office Action further reasoned that because expression of CEP is restricted to certain tissues and the interaction of CEP with hTM is a fundamental element in the development of inflammatory bowel disease and ulcerative colitis, the

claims are "not enabled for any other diagnostic method to detect any other disease in any other extracellular or intracellular space of any other cell or tissue." Applicant respectfully disagrees with the notion that restricted expression of CEP entails lack of enablement for the claimed diagnostic method. While the absence of CEP in certain tissues may suggest the absence of CEP-hTM complexes, such a finding in itself has diagnostic value, as in the establishment of a differential diagnosis, and does not render the diagnostic method unenabled. Because the expression pattern of CEP is likely to change during disease states and may be associated with diseases other than ulcerative colitis, the diagnostic method of the present invention is a useful tool to examine abnormal or diseased tissues in general.

Lastly, the standard for enablement is that of undue experimentation. The fact that experimentation may be complex does not necessarily make it undue, if those of skill in the art typically engage in such experimentation. The specification teaches the detection of CEP and hTM in a variety of affected tissues. One of ordinary skill in the art can apply the teachings of the invention to any tissue, regardless of whether such tissue is known to express CEP or not. Tissue biopsies are well known and considered routine by those of skill in the art. Applicant therefore respectfully requests that the rejection be withdrawn.

The Office Action further stated that "applicant has not taught how to make and/or use any other detection reagent to identify CEP and hTM," and that applicant "is relying on the disclosure of a single detection agent (i.e. antibodies against CEP and hTM) to support an entire genus of detection agents, such as labeled polypeptides." Applicant respectfully disagrees. By disclosing the discovery that hTM and CEP bind to each other, the specification teaches a person of skill in the art that hTM, or hTM-derived peptides, can be used as probes for CEP; while CEP, or CEP-derived peptides, can be used as probes for hTM. In addition, actin, or actin-derived peptides, can be used as

probes for hTM, since actin is known to bind hTM (see also specification page 2, lines 2-3). Other proteins or peptides capable of binding to hTM or CEP can be identified through commercially available two-hybrid screens, such as the Clontech Matchmaker Gal4 Two Hybrid System 3. Because the preparation and use of reagents other than antibodies to probe for the expression of CEP and hTM are well known to persons of ordinary skill in the art, applicant respectfully requests that the enablement rejection be withdrawn.

Claims 12-15 have also been rejected under 35 U.S.C. §112, first paragraph, for containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention (Office Action p. 5). The Office Action stated that "applicant has disclosed a diagnostic method utilizing a single reagent (i.e. an antibody), therefore, the skilled artisan cannot envision all the contemplated "reagent" possibilities recited in the instant claims." Applicant respectfully disagrees. Under MPEP 2163 I.A., a claimed invention as a whole may not be adequately described if the claims require an essential or critical feature which is not adequately described in the specfication and which is not conventional in the art or known to one of ordinary skill in the art. As pointed out in the previous paragraph, the manufacture of probes for CEP and hTM is conventional to a person of skill in the art. In accordance with MPEP 2163 II.2. information which is well known in the art need not be described in detail in the specification. Applicant therefore respectfully requests that the rejection be withdrawn.

D. Rejection of Claims 12-15 under §102(a).

Claims 12-15 have been rejected under 35 U.S.C. 102(a) as being anticipated by Kesari et al. (Clin Exp Immunol 1999; 118: 219-227). Applicant respectfully points out that, according to MPEP

2132.01, applicant's disclosure of his own work within the year before the application filing date cannot be used against him under 35 U.S.C. 102(a). Applicant is submitting a declaration pursuant to 37 C.F.R. 1.132 establishing that the Kesari article is describing applicant's own work and accordingly respectfully requests that the rejection be withdrawn.

CONCLUSION

It is respectfully submitted that based on the foregoing reasons, claims 12-16 are allowable.

Respectfully submitted,

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MARKED-UP VERSION SHOWING CHANGES MADE TO CLAIM

In response to the Office Action, please amend the application as follows:

Please amend claim 12 as follows:

12. A diagnostic method for detecting diseases associated with an autoimmune [autoantigen] response to hTM in affected tissue, comprising detecting CEP-hTM complexes in [the affected] a tissue, the presence of CEP-hTM complexes being indicative of the disease.

CLEAN SET OF PENDING CLAIMS

12. A diagnostic method for detecting diseases associated with an autoimmune response to hTM in affected tissue, comprising detecting CEP-hTM complexes in a tissue, the presence of CEP-hTM complexes being indicative of the disease.

13. The method of claim 12, wherein the CEP-hTM complexes are detected in the extracellular space of the affected tissue.

14. The method of claim 12, wherein the CEP-hTM complexes are detected in intracellular space of the affected tissue.

15. The method of claim 12, wherein the tissue is the colon epithelium.

16. The method of claim 12, wherein the tissue is a circulating tissue.